Regional Water Supply Concepts Presentation "Region 3"

Broward County

Water Resources Task Force

May 1, 2009

REGION 3 - Regional Floridan Project Proposal

Water Resources Task Force
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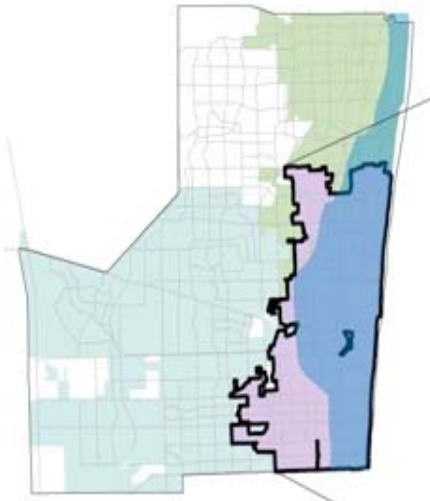
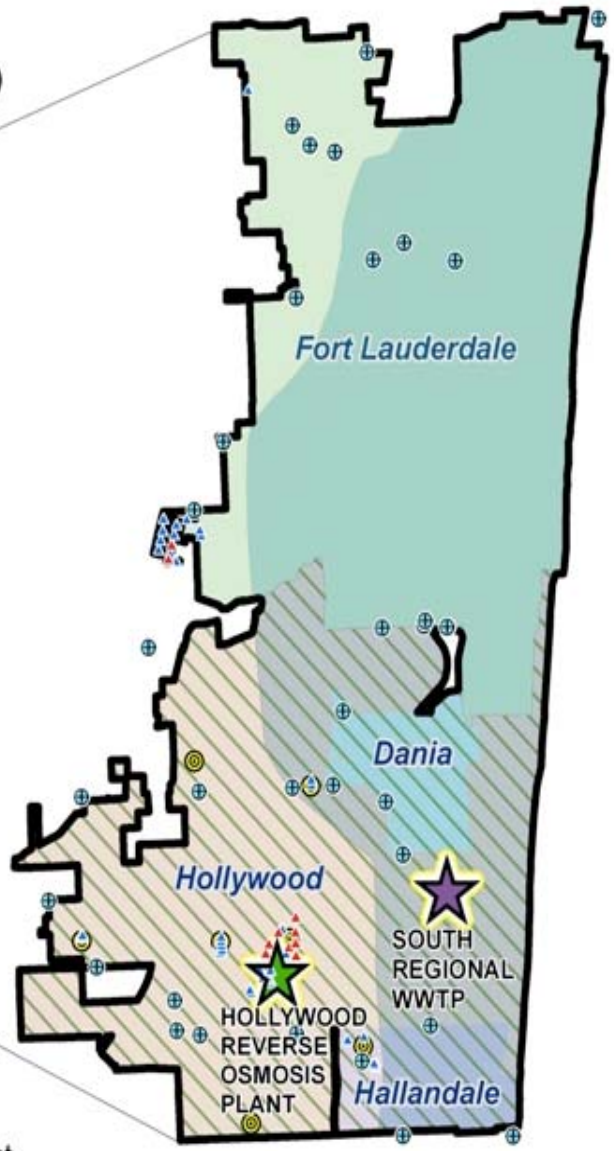
Regional Water Wholesale Concept (Near Term)





Legend

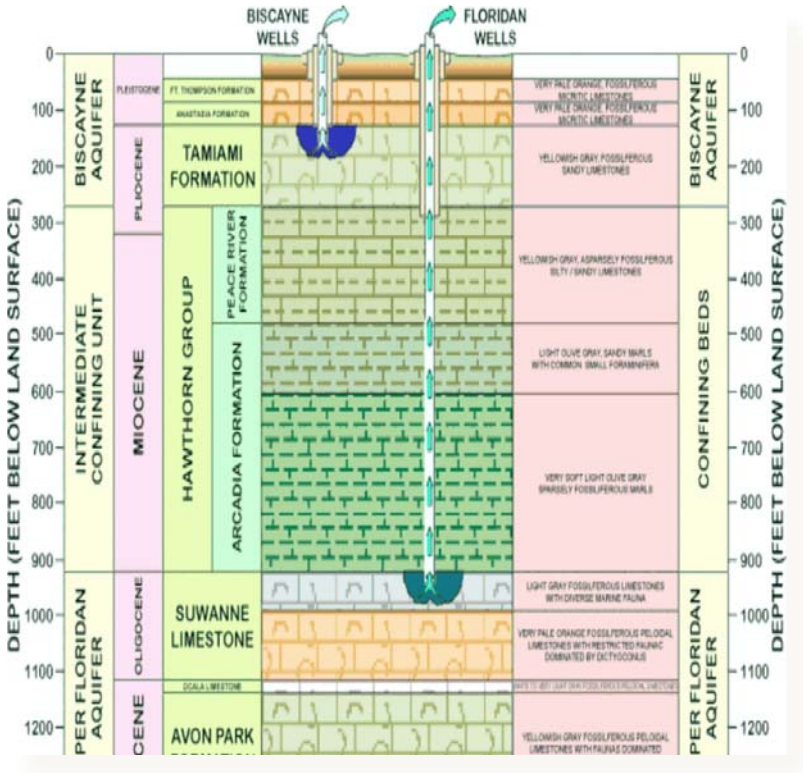
- Biscayne Potable Well
- Floridan Potable Well
- Reuse Facility
- Existing Low Pressure RO Plant
- Wellfield
- Interconnect
- Saltwater Intruded Area
- Area to benefit from Project

Floridan Project Proposal (near term)

Concept: ***Provide water on a wholesale basis from an existing AWS facility to help meet region's water supply needs.***

- Hollywood Water Treatment Plant has ability to treat water from both Biscayne and Floridan aquifer.

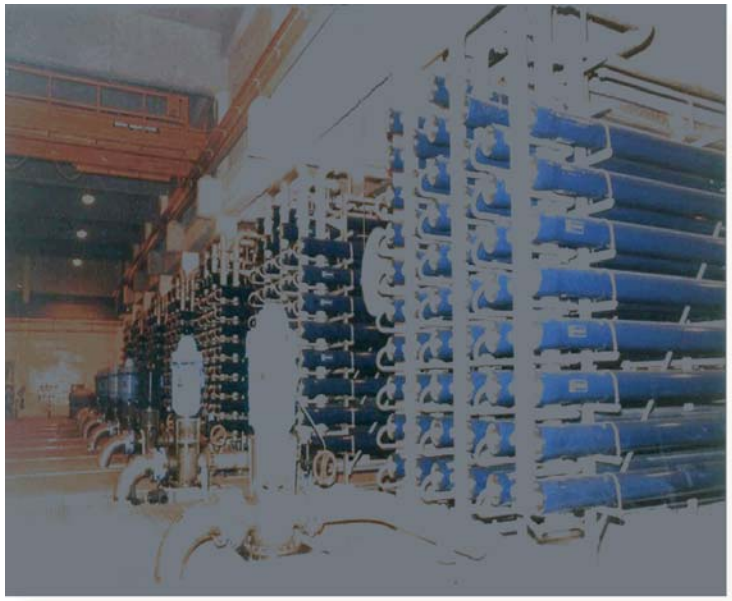
- Currently plant is being expanded to provided an additional 4-mgd of low pressure R.O. and Floridan well capacity.



Floridan Project Proposal (near term)

<u>Concept:</u> Provide water on a wholesale basis from an existing AWS facility to help meet region's water supply needs.

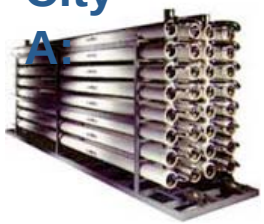
- Capacity available at the plant to help the region meet water supply needs using an alternative water supply. Potential regional partners: **City of Hallandale Beach, City of Dania Beach.**



- Expansion of existing plants is less expensive than construction of new facilities due to economies of scale savings.

Economies of Scale: Expansion vs. New Plant

City A



2-mgd R.O.

City B

1.0-mgd R.O.

City C

3-mgd R.O.

Construction of 6-mgd of New Capacity:

"Economies of Scale Savings"

Capital Costs Savings
$ 24 million

- Process piping
- Concentrate disposal
- Chemical systems
- Ancillary facilities

City D

Existing R.O. Facility

6-mgd expansion of existing R.O. facility:

$18 million

Floridan Project Proposal (near term)

Benefits:

- Allows for the deferment of significant capital investments in the construction of new facilities.
- Economies of scale offers significant capital investment and O&M savings.
- Regional and sub-regional initiatives have a better chance for funding (SFWMD, State, etc.).

Floridan Project Proposal (near term)

Issues requiring resolution:

- Pending near term commitments to develop Floridan aquifer in 10-year water supply plans
  - Go / No Go decision on new facilities
- Long term water quality impacts on Floridan aquifer.
- Impact of withdrawals on other permittees

Floridan Project Proposal (near term)

Costs:

- Expansion of existing facility estimated at approximately $3 per gallon of capacity.
- Wholesale rate established based on treatment and water supply capacity available.

REGION 3 - Regional Reuse Project Proposal

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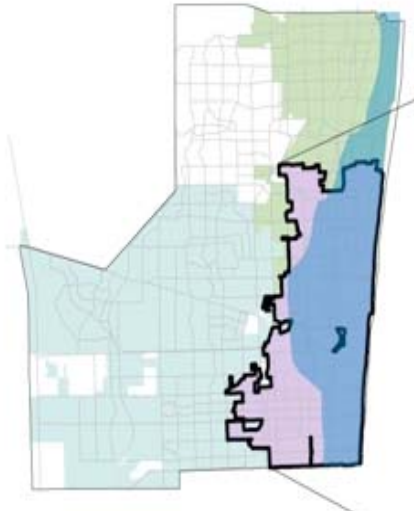
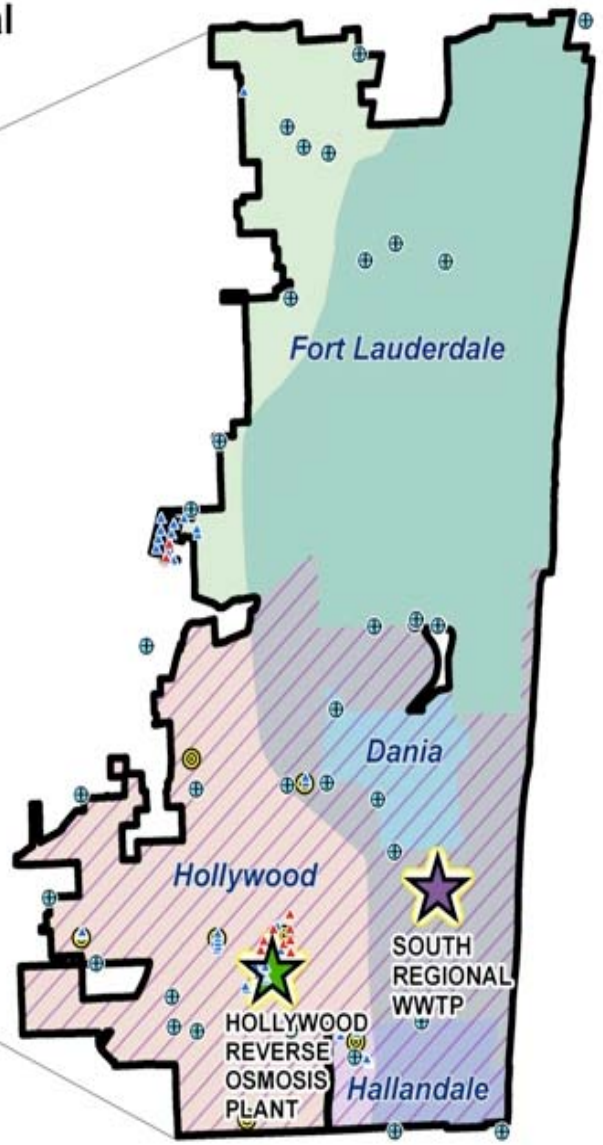
Floridan Aquifer Recharge Concept (2025)





Legend

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Regional Reuse Project Concept (2025)

Concept: ***Evaluate opportunities for indirect potable reuse applications within the Floridan aquifer.***

- Ocean outfall legislations requires that 60-percent of the base flow from the ocean outfall be converted to reuse.

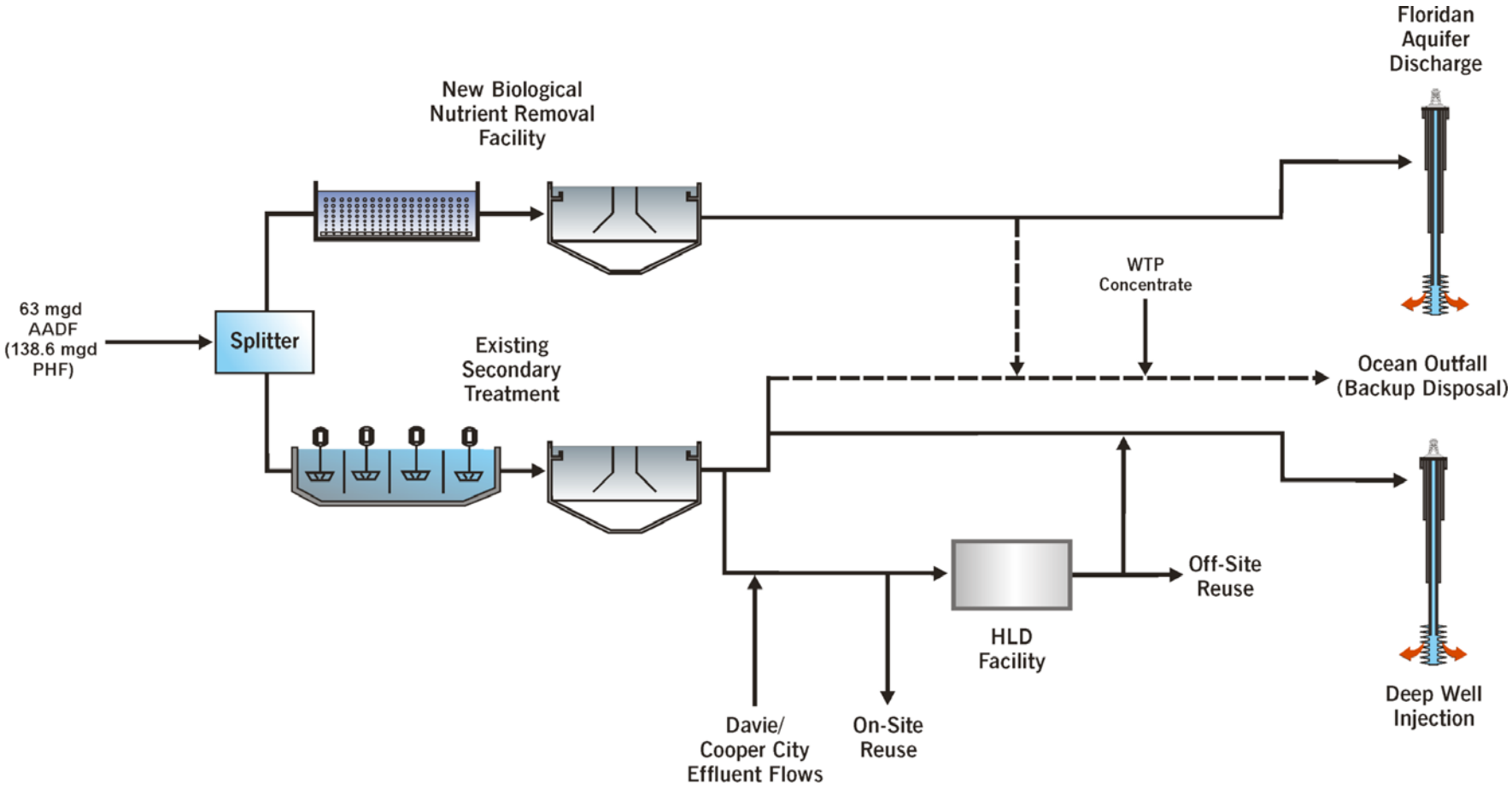
- City of Hollywood evaluated various options for compliance with the 60-percent reuse requirement.

Regional Reuse Project Concept (2025)

Options:

- Evaluated option to various options to meet 60-percent reuse requirement.
  - Biscayne aquifer and canal recharge ($700M - $800M)
  - **Floridan aquifer recharge ($400-$500M)**
  - 100-percent irrigation ($900M-$1B)
- The Floridan aquifer recharge option appeared to be most cost effective since water quality goals appear may be less restrictive than Biscayne recharge.

Floridan Aquifer Recharge



Regional Reuse Project Concept (2025)

Benefits:

- Potential of providing localized replenishment of the Floridan aquifer.
- Water quality goals appear to be less restrictive than Biscayne recharge.
- Lowest cost alternative.
- Recharge not directly affected by wet weather conditions.

Regional Reuse Project Concept (2025)

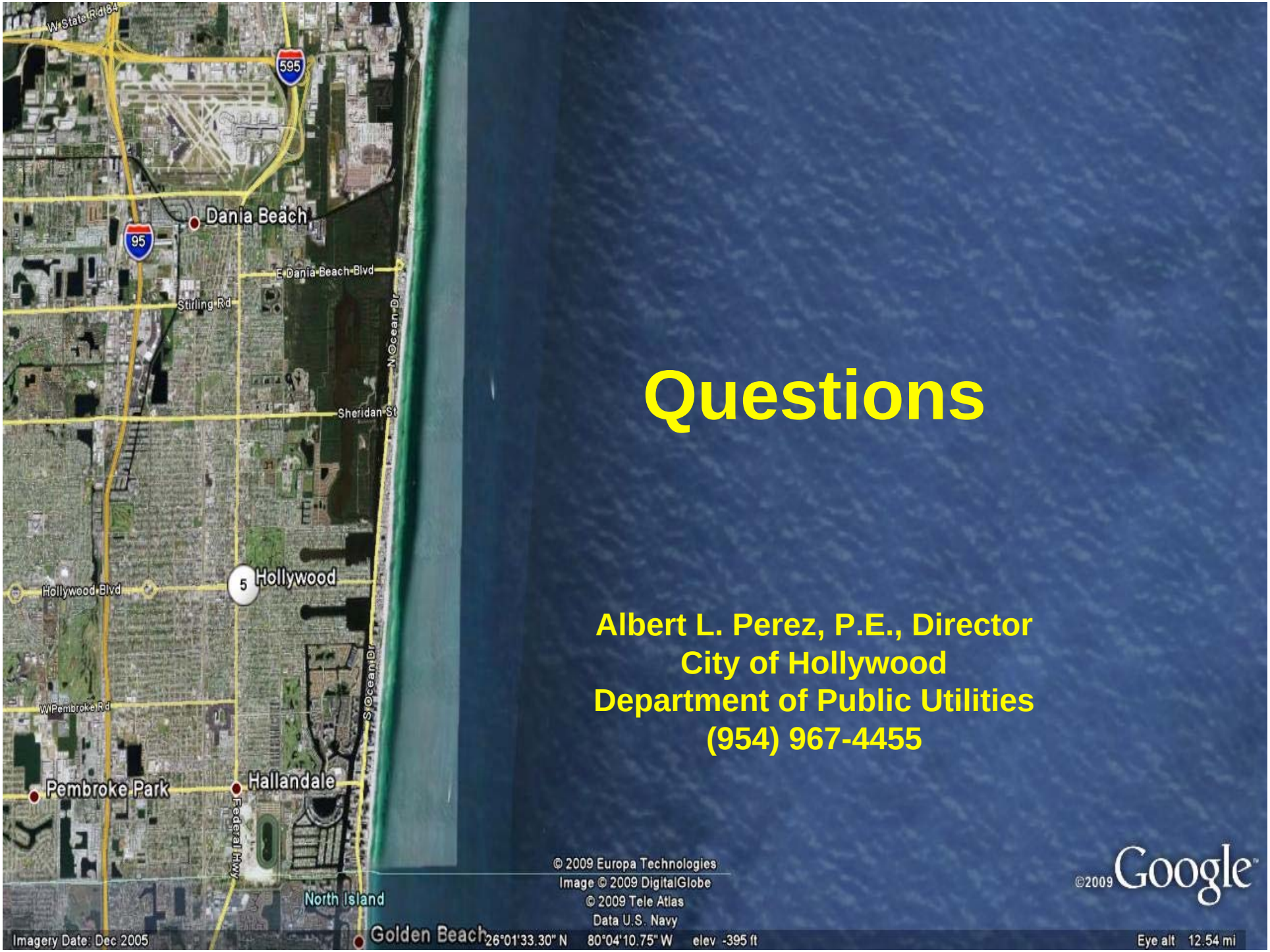
Issues requiring resolution:

- Floridan aquifer model has not been completed to determine the benefits of this option.
- Define impact of recent federal policies/mandates that may further affect this option due to its energy intensity.
- This concept of recharging the Floridan aquifer has not been tried therefore further exploratory work is needed to determine its viability and feasibility (pilot testing, demonstration, regulatory review and input).

Regional Reuse Project Concept (2025)

Costs:

- Approximate costs $10-12 per gallon of capacity.



Questions

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